

PATENT

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ABSTRACT OF THE DISCLOSURE

A fiber grating pressure sensor includes an optical sensing element which includes an optical fiber having a Bragg grating impressed therein which is encased within and fused to at least a portion of a glass capillary tube and/or a large diameter waveguide grating having a core and a wide cladding. Light is incident on the grating and light is reflected from the grating at a reflection wavelength λ_1 . The sensing element may be used by itself as a sensor or located within a housing. When external pressure P increases, the grating is compressed and the reflection wavelength λ_1 changes. The shape of the sensing element may have other geometries, e.g., a "dogbone" shape, so as to enhance the sensitivity of shift in λ_1 due to applied external pressure and may be fused to an outer shell.